

Tellabs® 8600 Managed Edge System

4-Port STM-1/OC-3 ATM Interface Module

Overview

Tellabs 8600 managed edge system consists of a range of modular IP/MPLS-based network elements and an integrated network and service management system.

4-port STM-1/OC-3 ATM Interface Module (IFM) is applicable for all Tellabs 8600 elements including Tellabs® 8660 edge switch, Tellabs® 8630 access switch and Tellabs® 8620 access switch. The module is mounted into the Interface Module Concentrator (IFC) of the Tellabs 8660/8630 or to the Tellabs 8620 enclosure.

The interface module provides ATM aggregation and switching capability to the Tellabs 8600 product family. This functionality is fundamental in the UMTS 3G mobile Radio Access Network (RAN) as well as when delivering business and broadband Internet access services over existing network infrastructure.



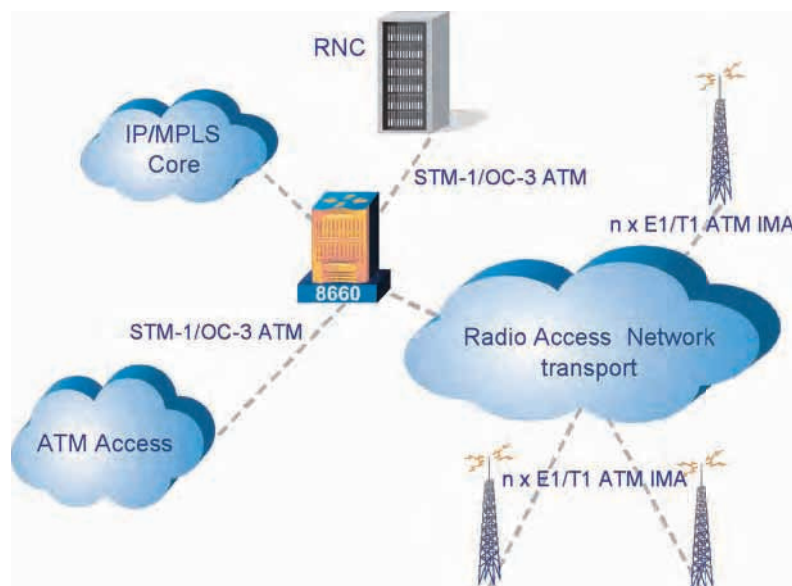
Applications

The 4-port STM-1/OC-3 ATM IFM can be used in applications, where connectivity to an ATM switch or an ATM capable interface is required.

The first releases of UMTS networks, especially the base station access, are strongly based on ATM technology. When Tellabs 8600 system is used for building the RAN, the STM-1/OC-3 ATM interface is essential for connectivity to the RNC. Instead of terminating ATM on E1/T1 interfaces in the RNC, this can be done in a Tellabs 8600 network element at the RNC site or in a hub site closer to the base stations. This reduces the number of RNCs, makes the network more scalable and improves the cost-efficiency. Across the Tellabs 8600 network all traffic, including ATM, can be

carried using MPLS pseudo wires or ATM traffic can be just cross-connected as ATM VPC/VCC. In the Tellabs 8600 element ATM service categories are mapped in a desired way to the IP DiffServ traffic classes, which ensures proper quality of service treatment across the network for the carried traffic and services.

On the wireline service side ATM technology is gradually being replaced by Ethernet, IP and MPLS. However, majority of the DSL installed base relies on ATM and some service providers still use ATM for delivering LAN-IC services to large business customers. Tellabs 8600 equipped with STM-1/OC-3 ATM interface can efficiently aggregate or terminate IP and Ethernet traffic from ATM access devices, e.g. ATM DSLAMs or ATM switches. This helps the service provider to migrate smoothly to IP/MPLS and at the same time utilize the installed base in the most efficient way.



Product description

The interface module has four unchannelized STM-1/VC-4 or OC-3/STS-3c ATM ports. The module is equipped to the IFC in the Tellabs 8660 edge switch and the Tellabs 8630 access switch or to the IFM slot in the Tellabs 8620 access switch. The IFC can be equipped with two freely selectable modules and then positioned to any free slot in Tellabs 8660 edge switch and Tellabs 8630 access switch.

Advanced Quality of Service implementation makes sure that the ATM traffic is treated properly, when passing through a Tellabs 8600 element and IP/MPLS network. Policing, queuing, scheduling and shaping can be done for each VPC/VCC and Connection Admission Control (CAC) for each VPC and VCC to ensure the resource availability for an established connection.

ATM VPC/VCC cross-connections can be done inside the Tellabs 8600 element between two ATM interfaces. Alternatively the ATM traffic can be tunneled over MPLS by using ATM N-to-one cell mode PWE3 tunnels (Pseudo Wire Emulation Edge-to-Edge). The traffic class (CBR, rt-VBR, nrt-VBR, UBR+ or UBR) of the incoming VPC/VCC connection is mapped to an IP DiffServ class (RT, AF or BE) according to the rules specified by the service provider.

1+1 MSP and APS protection can be used between STM-1/OC-3 interfaces to provide link level protection between the network elements. The working and protecting links are located in different IFCs providing protection against line card failures.

Network management

As the STM-1/OC-3 ATM IFM is part of Tellabs 8600 system it is fully managed with Tellabs 8000 network manager. All the interface, service and connection level parameters are configured remotely through the Tellabs 8000 network manager GUI based tools. This is the primary and easiest way to configure the unit and the network.

Tellabs 8000 network manager also provides centralized fault and performance monitoring as well as in-built testing capabilities.

Alternatively CLI can be used for setting up the parameters on the module. SNMP is supported for monitoring purposes, e.g. for fault and performance management for other systems.

Tellabs 8000 management system takes care of keeping a full consistency in between the network elements and the database.

Physical Interface

ETSI

- Four STM-1/VC-4 G.957 physical interfaces
- Replaceable SFP modules with multiple reaches and types including electrical interface
- Unidirectional and bidirectional MSP 1+1 protection

ANSI

- Four OC-3/STS-3c T1.105 physical interfaces
- Replaceable SFP modules with multiple reaches and types including electrical interface
- Unidirectional and bidirectional APS 1+1 protection

Encapsulations

- ATM
- IPv4/AAL5/ATM (RFC2684 SNAP and VCmuxed*)
- IPv4/Eth/AAL5/ATM (RFC2684 SNAP)*
- IPv6/AAL5/ATM (RFC2684 SNAP)*
- Eth/AAL5/ATM (RFC2684 SNAP)*

Functionality

- ATM VPC and VCC cross-connections
- ATM VPC and VCC tunneling over ATM N-to-one cell mode MPLS PWE3 (draft-ietf-pwe3-atm-encap)
- IP termination to IP VPN (RFC 2547bis)
- Ethernet/ATM interworking*
- Ethernet tunneling from Ethernet/AAL5/ATM to Ethernet MPLS PWE3 (draft-ietf-pwe3-ethernet-encap)*
- ATM OAM VP/VC Segment Loopback capability

QoS

ATM

- CBR, rt-VBR, nrt-VBR, UBR+ and UBR service categories
- ATM Forum Traffic Management 4.1
- VP/VC shaping
- VP/VC policing*
- ATM interface CAC (sum of ATM VPs)
- CAC for UBR/CBR/VBR
- CAC overbooking option
- QoS mappings based on ingress port*, ATM VPI or VCI

DiffServ

- Strict priority and weighted fair queuing (WFQ) scheduling
- DiffServ traffic policing with two-rate three-colour marker (RFC 2698)
- RED and WRED queue management
- Traffic shaping per VLAN
- DiffServ Aware MPLS Traffic Engineering (E-LSP and L-LSP)
- Traffic classification based on ingress port, 802.1Q (VLAN), 802.1P (PRI) MPLS EXP, L-LSP, DSCP or L3/L4 header fields
- RSVP-TE CAC with overbooking option

Power Consumption

- Maximum 15 W

Environment

- Storage: ETS 300 019-1-1:2003-04 Class 1.1, Temperature: -5°C to $+45^{\circ}\text{C}$
- Transportation: ETS 300 019-1-2:2003-04 Class 2.3, Temperature: -40°C to $+70^{\circ}\text{C}$
- Normal Operating Conditions: ETS 300 019-1-3:2003-04 Class 3.2 (non-condensing) Temperature: -5°C to $+45^{\circ}\text{C}$, Relative humidity: 5% to 95%
- NEBS Level 3

Regulatory

- Safety: EN60950-1:2001
- EMC: EN 300 386:2000 and EN 300 386:2001
- Telecom: RTTE Directive 1999/5/EC
- NEBS Level 3

Availability

For more information, please contact your local Tellabs sales representative, local Tellabs sales office, or see www.tellabs.com

*) For future release

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